CLAIMS

1. Purified polypeptide, comprising an amino acid sequence chosen from:

a) the sequence SEQ ID No. 2,

b) any biologically active sequence derived from SEQ ID No. 2.

2. Polypeptide according to Claim 1, characterized in that it comprises the amino acid sequence SEQ ID No. 2.

3. Polypeptide according to Claim 1, characterized in that it is a variant form of the polypeptide of sequence SEQ ID No. 2 in which the 8 C-terminal residues are substituted by the following 6 residues: VRCVTL.

4. Polypeptide according to Claim 1, characterized in that it is a soluble form stretching up to residue 343 and preferably up to residue 337.

5. Isolated nucleic acid sequence encoding a polypeptide according to claim 1 ~~any one of Claims 1 to 4.~~

6. Isolated nucleic acid sequence according to Claim 5, characterized in that it is chosen from:

a) the sequence SEQ ID No. 1,

b) the nucleic acid sequences capable of hybridizing to the sequence SEQ ID No. 1 and encoding a polypeptide having an IL-13 β receptor activity,

c) the nucleic acid sequences derived from the sequences a) and b) because of the degeneracy of the genetic code.

7. Nucleic acid sequence according to Claim 6, characterized in that it comprises or consists of the nucleotide linkage stretching from nucleotide No. 1 up to nucleotide 1081 and preferably up to nucleotide 1063 on the sequence SEQ ID No. 1.

8. Purified polypeptide, comprising an amino acid sequence chosen from:

a) the sequence SEQ ID No. 4,

b) any biologically active sequence derived from SEQ ID No. 4.

9. Polypeptide according to Claim 8, characterized

in that it comprises the amino acid sequence SEQ ID No. 4.

10. Polypeptide according to Claim 9, characterized in that it is a soluble form stretching up to residue 343 and preferably up to the residue between 336 and 342.

11. Isolated nucleic acid sequence encoding a polypeptide according to Claim 8 ~~any one of Claims 8 to 10.~~

12. Isolated nucleic acid sequence according to Claim 11, characterized in that it is chosen from

a) the sequence SEQ ID No. 3,

b) the nucleic acid sequences capable of hybridizing to the sequence SEQ ID No. 3 and encoding a polypeptide having an IL-13 α receptor activity,

c) the nucleic acid sequences derived from the sequences a) and b) because of the degeneracy of the genetic code.

13. Nucleic acid sequence according to Claim 12, characterized in that it comprises or consists of the nucleotide linkage stretching from nucleotide No. 1 up to nucleotide 1059, and preferably up to nucleotides between numbers 1041 and 1056 on the sequence SEQ ID No. 3.

14. Cloning and/or expression vector containing a nucleic acid sequence according to any one of Claims 5 or 11 ~~any one of Claims 5 to 7 and 11 to 13.~~

15. Vector according to Claim 14, characterized in that it is the plasmid PSE-1.

16. Host cell transfected with a vector according to Claim 14 ~~or 15~~.

17. Transfected host cell according to Claim 16, characterized in that it is a cell of the COS-7, COS-3 or CHO line.

18. Nucleotide probe characterized in that it hybridizes specifically with any one of the sequences according to Claim 5 ~~Claims 5 to 7,~~ their complementary sequences or the corresponding messenger RNAs.

19. Probe according to Claim 18, characterized in that it comprises at least 10 nucleotides.

20. Probe according to Claim 18, characterized in that it comprises the whole of the sequence SEQ ID No. 1

or its complementary strand.

21. Nucleotide probe, characterized in that it hybridizes specifically with any one of the sequences according to Claims 11 to 13, their complementary sequences or the corresponding messenger RNAs.

22. Probe according to Claim 21, characterized in that it comprises at least 10 nucleotides.

23. Nucleotide probe, characterized in that it comprises the whole of SEQ ID No. 3 or its complementary strand.

24. Antisense sequence capable of inhibiting, at least partially, the production of polypeptides according to any one of claims 1 to 4 and 8 to 10, characterized in that it is chosen from the sequences constituting the reading frame encoding a polypeptide according to any one of Claims 1 to 4 and 8 to 10 at the level of the transcript.

25. Use of a sequence according to any one of Claims 5 to 7 and 11 to 13, for the preparation of diagnostic nucleotide probes or of antisense sequences which can be used in gene therapy.

or its complementary strand.

21. Nucleotide probe, characterized in that it hybridizes specifically with any one of the sequences according to Claim 11 ~~Claims 11 to 13,~~ their complementary sequences or the corresponding messenger RNAs.

22. Probe according to Claim 21, characterized in that it comprises at least 10 nucleotides.

23. Nucleotide probe, characterized in that it comprises the whole of SEQ ID No. 3 or its complementary strand.

24. Antisense sequence capable of inhibiting, at least partially, the production of polypeptides according to any one of claims 1 or 8 ~~1 to 4 and 8 to 10~~, characterized in that it is chosen from the sequences constituting the reading frame encoding a polypeptide according to any one of Claims 1 or 8 ~~1 to 4 and 8 to 10~~ at the level of the transcript.

25. Use of a sequence according to any one of Claims 5 or 11 ~~5 to 7 and 11 to 13~~, for the preparation of diagnostic nucleotide probes or of antisense sequences which can be used in gene therapy.

26. Use of a probe according to any one of Claims 18, 21 or 23 ~~18 to 23~~, as *IN VITRO* diagnostic tool for the detection, by hybridization, of the nucleic acid sequences encoding a polypeptide according to any one of Claims 1 or 8 ~~1 to 4 or 8 to 10~~, in biological samples, or for revealing aberrant syntheses or genetic abnormalities such as the loss of heterozygosity or genetic rearrangement.

27. Use of a probe according to any one of Claims 18, 21 or 23 ~~18 to 23~~ for the detection of chromosomal abnormalities.

28. *IN VITRO* diagnostic method for the detection of aberrant syntheses or of genetic abnormalities at the level of the nucleic acid sequences encoding a polypeptide according to any one of Claims 1 or 8 ~~1 to 4 or 8 to 10~~, characterized in that it comprises:

- bringing a nucleotide probe according to any one of Claims 18, 21 or 23 ~~18 to 23~~ into contact with a biological sample under conditions allowing the formation of a hybridization complex between the said probe and the above-

mentioned nucleotide sequence, optionally after a preliminary spell of amplification of the above-mentioned nucleotide sequence;

- detection of the hybridization complex which may be formed;
- optionally, sequencing the nucleotide sequence forming the hybridization complex with the probe of the invention.

29. Use of a nucleic acid sequence according to any one of Claims [50 or 51] ~~5 to 7 and 11 to 13~~ for the production of a recombinant polypeptide according to any one of Claims 1 to 4 and 8 to 10.

30. Method for producing an IL-13 receptor recombinant polypeptide, characterized in that transfected cells according to Claim 16 or 17 are cultured under conditions allowing the expression of a recombinant polypeptide of sequence SEQ ID No. 2 or of sequence SEQ ID No. 4 or a derivative, and in that the said recombinant polypeptide is recovered.

31. Mono- or polyclonal antibodies, conjugated antibodies, or fragments thereof, characterized in that they are capable of specifically recognizing a polypeptide according to any one of Claims [108] ~~1 to 4 and 8 to 10.~~

32. Use of antibodies according to the preceding claim, for the purification or detection of a polypeptide according to any one of Claims [108] ~~1 to 4 and 8 to 10~~ in a biological sample.

33. Process for the *IN VITRO* diagnosis of pathologies correlated with an abnormal expression of IL-13 receptor in biological samples capable of containing the IL-13 receptor expressed at an abnormal level, characterized in that at least one antibody according to Claim 31 is brought into contact with the said biological sample, under conditions allowing the possible formation of specific immunological complexes between the IL-13 receptor and the said antibody(ies) and in that the specific immunological complexes which may be formed are detected.

34. Kit for the *IN VITRO* diagnosis of an abnormal expression of the IL-13 receptor in a biological sample and/or for measuring the level of expression of the IL-13 receptor in the said sample comprising:

- at least one antibody specific for the IL-13 receptor according to Claim 31, optionally attached onto a support,
- means for revealing the formation of specific antigen/antibody complexes between IL-13 receptor and the said antibody(ies) and/or means for quantifying these complexes.

35. Method for the identification and/or isolation of polypeptides according to Claim 1 or 8 or agents capable of modulating their activity, characterized in that a compound or a mixture containing various compounds, optionally nonidentified, is brought into contact with cells expressing at their surface a polypeptide according to Claim 1 or 8, under conditions allowing interaction between the polypeptide and the said compound, in the case where the latter would have an affinity for the polypeptide, and in that the compounds bound to the polypeptide, or those capable of modulating the biological activity thereof, are detected and/or isolated.

36. Ligand or modulator for a polypeptide as defined in Claims ~~1 to 4 or 8 to 10~~ 1 or 8, capable of being obtained according to the method of Claim 35.

37. Pharmaceutical composition comprising, as active ingredient, a polypeptide according to any one of Claims ~~1 to 4 or 8 to 10~~ 1, 8 or 10.

38. Pharmaceutical composition according to the preceding claim, characterized in that it comprises a polypeptide according to Claim 4 or 10.

39. Use of a polypeptide according to ~~any one of Claims 1 to 4~~ claim 1, for screening agents capable of modulating the activity of IL-13Rβ.

40. Use of a polypeptide according to ~~any one of Claims 8 to 10~~ claim 8, for screening agents capable of modulating the activity of IL-13Rα.

41. Use of a polypeptide according to ~~any one of~~ claim 1

~~Claims 1 to~~ 4, for the manufacture of products capable of modulating activity of IL-13Rβ.

42. Use of a polypeptide according to ~~any one of Claims 8 to 10~~, for the manufacture of products capable of modulating the activity of IL-13Rα.

43. Use of a polypeptide according to Claim 4 or 10, for the synthesis of a medicinal product with IL-13 antagonizing effect.